

ABSTRACT

In accordance with an embodiment of the present intention, a fluorine residue removing method includes: supplying an oxygen-containing gas and a hydrogen-  
5 containing gas into a CVD chamber; producing a plasma of a mixture of the oxygen-containing gas and the-hydrogen containing gas, so that the plasma reacts with the fluorine residue, exothermically generating water; and evacuating from the CVD chamber a product of the reaction  
10 between the plasma and the fluorine residue. For the hydrogen-containing gas,  $\text{NH}_3$  is often used, and for the oxygen-containing gas,  $\text{N}_2\text{O}$ ,  $\text{O}_2$ , or air is used. Exemplary mixtures of the oxygen-containing and the hydrogen-containing gases include 70 mol %  $\text{N}_2\text{O}/\text{NH}_3$ , 50  
15 mol %  $\text{N}_2\text{O}/\text{NH}_3$ , and 52 mol %  $\text{O}_2/\text{NH}_3$ . An inert gas, such as He, Ne, Ar, or Kr, can be optionally supplied into the chamber to stabilize the plasma.